LOCATION AND SURVEY
DESCRIPTION OF SURVEY DATA FILE DELIVERABLES

May 14, 2010

STATIC GPS / RTK FOR PRIMARY CONTROL

1) GPS raw data files
2) GPS rinex files
3) NGS OPUS solution printouts
4) GPS point description document
5) GPS control sketch

TRAVERSE FOR PRIMARY CONTROL

1) Traverse sketch

LEVELS

1) Levels field book (3 wire forward, single wire return)
2) BM tabulation form
3) TBM tabulation form
4) Documentation on vertical control point (NGS benchmark) held for levels.

UTILITIES

1) Letter to DOTD Utility Relocation Engineer listing all Utility Companies, Utility Company address and Utility Company contact person
2) Letter to DOTD Utility Relocation Engineer listing La. One call contacts and ticket numbers.
3) Utility Report Forms
4) Utility Master Pole List Form

SURVEY DATA COLLECTOR FILE TYPES

The following data collector file types are supported by Bentley Inroads Survey, version 8.5 or later version, and may be acceptable.

SDMS (.cal)
Sokkia SDR (.sdr)
SMI Raw (.raw)
LISCAD GSI (.gsi)
Wild GRE (.gre)
AASHTO SDMS (.sdm)
Zeiss REC500 (.zss)
Geodimeter (.raw)
Topcon FC4 (.fc4)
Nikon (.mwd)
TDS (.rw5)
TDS RAW (.raw)
Trimble DC (.dc)

Location and Survey is familiar with only the Sokkia SDR and Trimble DC data collector file types and cannot verify which of the listed data types work correctly and/or contain the required information.

SURVEY FEATURE CODES AND ATTRIBUTES REQUIRED

Refer to the Location and Survey Feature Code Guide Book (revised 01-30-09) for a listing and description of survey feature codes and attributes required for each code.

SURVEY DATA COLLECTOR FILE REQUIRED INFORMATION

Any data collector file type submitted for total station surveys should contain the following information;

1) primary control points
   - primary control point number
   - primary control point x,y,z coordinates
   - primary control point DOTD feature code
   - primary control point DOTD attributes *

2) instrument setup
   - setup point number
   - setup point x,y,z coordinates
   - setup point DOTD feature code
   - setup point DOTD attributes *
   - instrument height

3) backsite observation
   - backsite point number
   - backsite point x,y,z coordinates
   - backsite point DOTD feature code
   - backsite point DOTD attributes *
   - backsite horizontal angle
   - backsite vertical angle
   - backsite slope distance
   - backsite target height
   - backsite tollerence errors

4) foresite observation
   - foresite point number
   - foresite point DOTD feature code
   - foresite point DOTD attributes *
   - foresite horizontal angle
   - foresite vertical angle
   - foresite slope distance
   - foresite target height

5) prism constant correction (should be applied at the total station)

6) atmospheric corrections (should be applied at the total station)

* The Consultant will be responsible to input the required attribute information into the final edited and corrected survey data file (.FWD) if the acceptable data collector file type does not support attributes. A fieldbook should be used to record point number and attribute and delivered with the survey deliverables.

FINAL EDITED AND CORRECTED SURVEY DATA FILE (.FWD)

The final edited and corrected survey data file must be a Bentley Inroads Survey, version 8.5 or later version, .FWD file with all errors and erroneous data removed. This .FWD file, when opened in Microstation, version 8.5 or later version, with Bentley Inroads Survey, must generate correct 3d plan graphics with all required DOTD attribute information included .

FINAL 3D CADD FILE (.DGN)

The final 3d cadd file must be a Microstation, version 8.5 or later version, 3d, .DGN file, generated by Bentley Inroads Survey, from the final .FWD file described above. All DOTD cells, colors and line styles must be utilized. All attribute information must be attached to all cells and lines of the survey as tags. DOTD level organization must be utilized. The survey alignment must be merged from the final 2d cadd file described below.

FINAL 2D CADD FILE (.DGN)

The final 2d cadd file must be a Microstation, version 8.5, 2d, .DGN file, generated with Bentley Inroads Survey software containing the survey alignment.

FINAL DIGITAL TERRAIN MODEL FILE (.DTM)

The final digital terrain model file must be a Bentley Inroads, version 8.5 or later version, .DTM file, generated by Bentley Inroads Survey, from the final .FWD file described above and must containing all points and breaklines of the surveyed surface. The perimeter of the DTM must be clean and contain no erroneous information.

FINAL GEOMETRY FILE (.ALG)

The final geometry file must be a Bentley Inroads, version 8.5 or later version, .ALG file, generated by Bentley Inroads Survey, from the final .FWD file described above and must contain the complete geometry of every point and line in the survey and survey alignment, along with all descriptions and attributes of every point and line.

FINAL GEOMETRY ASCII FILE (TXT)

The final geometry ASCII file must contain all points of the survey and survey alignment and must be a comma delimited file containing the following information in the following format;

Point number, northing, easting, elevation, description, attribute information

FORMS

1) Location Report
2) Structure Report Form
3) Box Culvert Report Form
4) Survey Activity And Progress Report
5) Property Owners Permission Of Entry Form
6) Storage Tank Report Form
7) Storage Tank/Hazardous Waste Site Information Form

SURVEYORS CERTIFICATION

It is the responsibility of your firm to provide Location and Survey with a survey that is accurate, correct, and conforms to all applicable minimum standards for engineering surveys. The survey deliverables must meet the ***"LADOTD Software and deliverable Standards for Electronic plans"*** as describe herein.

The transmittal letter shall be signed and sealed, certifying correctness of survey and deliverable standards.

Suggested transmittal letter wording:

Transmitted herewith is the completed topographic survey for the captioned project. This field survey is certified to have been performed within acceptable standards of practice for engineering surveys, has been reviewed, checked, and is considered to be correct within those standards. This transmittal is in accordance with LADOTD software and Deliverable Standards for Electronic Plans and includes the following: